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PATENT APPLICATION



IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

In re Application of:

MITSUAKI AMEMIYA

Application No.: 09/487,718

Filed: January 19, 2000

For: APPARATUS AND PROCESS FOR
PRODUCING CRYSTAL ARTICLE,
AND THERMOCOUPLE USED
THEREIN

Examiner: R. M. Kunemund

Group Art Unit: 1765

July 10, 2003

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Commissioner for Patents
P.O. Box 1450
Alexandria, VA 22313-1450

PRELIMINARY REMARKS

Sir:

Prior to the examination on the merits, please consider the following remarks.

I hereby certify that this correspondence is being deposited with the United States Postal Service as first-class mail in an envelope addressed to: Commissioner for Patents, P.O. Box 1450, Alexandria, VA 22313-1450 on July 10, 2003.

(Date of Deposit)

Justin D. Petruzzelli
(Name)


Signature

July 10, 2003

Date of Signature

REMARKS

At page 2 of the Advisory Action mailed June 27, 2003, it is alleged that, "There is no support for the use of multiple disks as is claimed." Applicant understands that this statement was made in reference to Claim 73. Applicant respectfully traverses this statement and submits that Claim 73 is properly supported by the originally filed disclosure for at least the following reasons.

Claim 73 requires a process for crystal growth by using a crystal growth apparatus. The crystal growth apparatus includes a crucible, a heating means, a supporting means, a cooling means, and a temperature detecting means. The crucible is for holding a crystal material and is divided into plural layers by a plurality of disks formed across respective cross-sections of the crucible. The heating means is capable of forming, at a periphery of the crucible, a temperature gradient within a temperature range including a melting point of the crystal material. The supporting means is for supporting a center bottom of the crucible. The cooling means is provided at the supporting means. The temperature detecting means is provided in at least one of the disks and is for detecting a temperature distribution across that disk. The process includes the steps of detecting the temperature distribution across the at least one of the disks, and controlling the heating means and the cooling means such that in the detected temperature distribution across the at least one disk, a temperature almost at a center portion thereof is minimized.

The portions of Claim 73 which refer to multiple disks are supported by the disclosure as follows.

Support for the claim language, "the crucible being divided into plural layers by a plurality of disks formed across respective cross-sections of the crucible" can be found at least at page 74, lines 10-15 of the specification, with reference to Figure 24A. This portion of the specification, in conjunction with Figure 24A, describes a crucible 3

divided into plural layers by a plurality of disks 5.

Furthermore, support for the claim language, “a temperature detecting means provided in at least one of the disks for detecting a temperature distribution across that disk”, and the language, “detecting the temperature distribution across said at least one of said disks” can be found at least at page 76, line 25, to page 77, line 9 of the specification. This portion of the specification refers to Figure 24A, which shows sheathed portions 31 of thermocouples 18 connected to the plurality of disks 5. The cited portion of the specification states, in part, that “a hole is made in the disk 5 and a plurality of thermocouples are set thereto so that the temperature distribution can be measured.”

In regard to the claim language, “controlling the heating means and the cooling means such that in the detected temperature distribution across said at least one disk, a temperature almost at a center portion thereof is minimized”, support can be found at least at page 79, line 25, to page 80, line 12 of the specification.

It is to be understood, of course, that the scope of Claim 73 is not limited to the details of this embodiment, which is referred to only for purposes of illustration.

Applicant respectfully submits that Claim 73 is adequately supported by at least the cited portions of Applicant’s originally filed disclosure, as detailed above. Accordingly, Claim 73 is believed not to contain any new matter.

In view of the foregoing remarks, Applicant respectfully requests favorable reconsideration and the allowance of the present application.

Applicant's undersigned attorney may be reached in our New York Office by telephone at (212) 218-2100. All correspondence should continue to be directed to our address listed below.

Respectfully submitted,


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